

C 3.3 and C3.3a1 Operating Techniques

Table S1.2 to Schedule 1 of Environmental Permit EPR/CP3507PJ identifies the operating techniques to be used at the Cranswick Lazenby's site.

The existing operating techniques, as implemented through the site's documented management systems (see supporting document folder C2.3d, Management Systems), generally remain valid as they are not impacted significantly by the changes described in this variation application – ie. the installation of an on-site effluent treatment plant and the diversion of process derived waste water away from land spreading on neighbouring farm land in favour of on-site treatment and discharge of the treated effluent to a local surface water course, Watton Brook.

The introduction of the effluent treatment plant will result in the requirement for alterations to some existing management system documents, for example, amended accident and odour management plans which take into account the additional on-site activities, will be required, waste management procedures will need to address the wastes generated by the effluent treatment plant in addition to those currently generated on site etc.

The effluent treatment plant installation will result in the limited introduction of new documents relating specifically to the operation and maintenance of the effluent treatment plant, for example effluent treatment plant performance monitoring and the identification of environmental aspects and impacts relating to the ETP.

With the exception of plant specific data maintained in the CMMS, the standby boiler replacement will not affect the documented management system as the change simply reflects the replacement of an existing unit with a very similar unit, albeit of greater capacity.

The management system changes required in connection with the ETP installation are relatively minor in nature and, in the main, represent operational detail only as nothing will change fundamentally or significantly in terms of the way in which operational and maintenance activities are conducted at the site, or in relation to the environmental protection and accident prevention, control and mitigation measures in place. The most significant management systems changes are those which reflect the operating techniques (including operation and maintenance) associated with the proposed effluent treatment plant operational performance and control and the monitoring of effluent treatment plant discharges to confirm that they meet the required standards in order to ensure adequate protection of the receiving water and the plant and animal life which the receiving water supports.

The documents which set out the operating techniques and form part of the site's documented management system are reviewed and updated periodically and in the event of any significant changes on site to ensure that they accurately reflect current arrangements and that they are aligned with technical guidance note EPR 6.12 (The Red Meat (Cattle, Sheep and Pigs) Sector) issued by the Environment Agency and relevant parts of the European BAT reference document for Slaughterhouses and Animal By-products Industries.

Copies of the example documents identified in Section C2.3d, Management Systems and listed in the table below are provided either in this supporting document folder C3.3 / C3.3a1, Operating Techniques and Technical Standards, or in supporting document folder C3.3b, General Requirements. Two additional documents, CD015f Aspects Register SEU's (updated to include the ETP) and CD019 Monitoring, Measuring and Performance Procedure, are also added to the table reproduced from Section C2.3d below, with copies provided in this (C3.3 / C3.3a1) supporting document folder.

Number	Contents / Procedures	Responsibility	Version No	Original Issue Date
CD010	Environmental and Energy Policy (Group) Current	Group / Managing Director / Environmental and Sustainability Advisor	2020	n/a
CD004	SSSIs, Protection Zones, Flood and External Contamination Risk Assessment	Environmental and Sustainability Advisor	1	20/08/2019
CD005	Emissions and Fugitive Emissions Management Plan	Environmental and Sustainability Advisor	3	28/08/2019
CD008	Waste Storage, Handling & Disposal Procedures	Environmental and Sustainability Advisor	4	28/12/2007
CD011	Odour Management Procedure and Plan	Environmental and Sustainability Advisor	8	28/12/2007
CD011a	Daily Odour and Noise Monitoring Check	Environmental and Sustainability Advisor	5	09/04/2011
CD011b	Noise Management Procedure and Plan	Environmental and Sustainability Advisor	2	01/08/2013
CD015	Aspects Register ABP	Environmental and Sustainability Advisor	2	06/01/2019
CD016	Emergency Response Plan	Environmental and Sustainability Advisor	1	15/01/2020
CD023	Complaint Reporting Form	Environmental and Sustainability Advisor	5	01/04/2014
CD023a	Complaint Register	Environmental and Sustainability Advisor	2	04/11/2013
CD024	Incident and Non-conformance Report Form	Environmental and Sustainability Advisor	5	03/12/2010
CD015f	Aspects Register SEU's	Environmental and Sustainability Advisor	2	09/10/2020
CD019	Monitoring Measuring and Performance Procedure	Environmental and Sustainability Advisor	2	25/08/2020

The table below lists the EPR Schedule 1 listed activities and the directly associated activities that will be undertaken at the site once the proposed effluent treatment plant installation is completed as described in Section C3.1, Activities to be Varied) of the permit application.

Schedule 1 Listed Activities

Schedule 1 references	Description of the activity
Section 6.8A(1)(b)	Slaughtering animals at a plant with a carcass production capacity of more than 50 tonnes per day – from the receipt of livestock to despatch of the finished product.
Section 5.4A(1)(a)(li)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day by physico-chemical treatment – from the receipt of raw effluent to the discharge of treated effluent to surface water (Watton Brook).
Section 5.4A(1)(a)(i)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day by biological treatment – from the receipt of raw effluent to the discharge of treated effluent to surface water (Watton Brook).

Introduction of the effluent treatment plant will result in the addition of a Section 5.4A(1)(a)(i) activity as the plant uses a combination of physical, physico-chemical and biological treatment technologies.

Directly Associated Activities

Name of DAA	Description of the DAA
1. Raw materials storage	Storage of substances inherent to the activities that are likely to pollute the environment – includes the storage of refrigerants, chemicals and light fuel oil.
2. Steam generation	Generated using 6.2 MWh input gas and light oil fired primary duty boiler and 4.3 MWh input gas and light oil fired back up boiler – from the receipt of natural gas and fuel oil to the storage of 34m ³ of fuel oil and the release of waste gases from the chimney.
3. Surface water drainage systems	Discharge of uncontaminated surface and roof water run off to Watton Brook via a drainage ditch – from the collection of uncontaminated surface and roof water to the release into the drainage ditch.

Directly associated activity AR4, steam generation, will require minor amendment to accurately reflect the increased capacity of the replacement boiler and its incorporation as the primary steam raising plant on site. The remaining currently authorised directly associated activities identified in the permit will not be affected.

Current activities at the site authorised by environmental permit EPR/CP3507PJ are undertaken in accordance with operating techniques that are aligned with the best available techniques (BAT) requirements set out in technical guidance EPR 6.12 (The Red Meat (Cattle, Sheep and Pigs) Sector) issued by the Environment Agency and relevant parts of the European BAT reference document for Slaughterhouses and Animal By-products Industries.

The tables below identify the main technique or techniques that will be adopted in relation to the proposed effluent treatment plant and the replacement boiler plant in order to implement the key BAT requirements set out in the above guidance and BREF documents.

1. Specific Effluent Treatment Plant Techniques

BAT criterion considered	Measures Implemented
Odour	Plant designed to provide maximum efficiency with minimum retention times to avoid stagnation.
Odour	Plant designed to operate continuously without balancing influent tank. All influents pumped from small collection sump via rotary screen to remove gross solids direct to first treatment stage DAF plant
Odour	Main items of processing plant likely to generate odour including primary screening and dewatering plant located inside building which is extractively vented via an activated carbon filter.
Odour	Access / egress doors to ETP building for pedestrians and vehicles normally closed and only opened for shortest possible duration when access / egress required.
Odour	Frequent removal of waste / materials from ETP building to avoid stagnation and odour generation.
Odour	Small activated sludge buffer tank installed to provide capacity to hold rejected WAS that cannot be fed directly to dewatering centrifuge. Buffer tank vented via air blowers into aeration tank.
Noise	With exception of air blowers serving aeration and buffer tanks, plant is not inherently noisy but main processing items including screening and dewatering plant located inside building
Noise	Air blowers installed in acoustic enclosures and located within ETP building.
Noise	Routine noise monitoring undertaken to detect any unusual / unanticipated noise in vicinity of site. Procedures to deal with any noise complaints in place.
Water use / waste water generation	Primary screening of influents to remove gross solids preventing blockages requiring frequent stoppages for cleaning.
Water use / waste water generation	High pressure / low volume warm water self-cleaning system used on primary screening plant.
Water use / waste water generation	Waste water from treatment plant suitable for return directly to environment via local surface water course, Watton Brook.
Water use / waste water generation	Where relevant, vessels fitted with overflow protection devices to avoid water contamination due to loss of containment. Vessels holding fluids with significant pollution potential located in bunds.
Energy efficiency	Energy efficient electrical drive motors installed
Energy efficiency	Air blower drive motors installed with "soft starters" and variable speed capability when not operating on full load.
Energy efficiency	LED lighting used internally and externally to ETP building

Energy efficiency	Ventilation, heating and thermal insulation systems serving building housing processing plant designed for maximum energy efficiency.
Raw materials use / waste avoidance	Use of $Fe_2(SO_4)_3$ for phosphate removal minimised by frequent analysis of influent P levels and adjustment of dosing rate to compensate.
Raw materials use / waste avoidance	Automatic make-up system for poly-electrolyte installed to provide optimum composition together with adjustable dosing rate to meet changing treatment plant requirements.
Raw materials use / waste avoidance	Activated sludge return and rejection rates controlled automatically to maintain optimum levels in plant and reject minimum quantities for disposal.
Raw materials use / waste avoidance	Rejected sludge dewatered via decanting centrifuge to minimise volume requiring disposal. Combined sludges disposed of to anaerobic digestion plant or land spreading.
Raw materials use/ waste avoidance	Raw materials, water, energy use inventory maintained, usage rates monitored as kpi against product generated, data reviewed and improvement options identified in pursuance of continuous improvement.
Raw materials use/ waste avoidance	Plc based HMI process surveillance and control system installed to facilitate process management resulting in efficient process operations and fewer process upsets leading to generation of waste requiring disposal rather than clean water suitable for release into the environment.
Process efficiency / Process Emissions	Quality of ETP influents controlled by ensuring (using staff competence and physical barriers as tools) minimum amount of solid animal waste allowed to enter internal drainage systems minimising normal organic loading on ETP and preventing possible ETP overload and generation of excessive bio-sludge quantities.
Process efficiency / Process Emissions	Quality of ETP influents controlled by ensuring high degree of control (using automated dosing systems and staff competence as tools) of hygiene chemicals used for cleaning purposes minimising potential for ETP performance impact and compromising treated effluent discharge quality.
Process efficiency / Process Emissions	Quantity of ETP influents controlled by using dry cleaning techniques, high pressure low volume sprays, wet air carcass scalding, automatic shut off triggers on water hoses etc techniques to minimise wastewater generation rates from slaughtering and carcass processing operations.
Process efficiency / Process Emissions	Frequent sampling and analysis of in process and final discharge effluents to ensure ETP performance optimised and final ETP effluent discharge complies with all quality specification requirements.
Process efficiency / Process Emissions	Sampling of aerial emissions form ETP building vent system to confirm odour abatement equipment operating effectively.

2. Specific Replacement Standby Boiler Techniques

BAT criterion considered	Measures Implemented
Energy efficiency / carbon emissions reduction	New dual fuel steam boiler plant (normally fired by natural gas) to generate both steam and hot water for process for the facility. Boiler plant is new Medium Combustion Plant and meets all MCPD requirements.
Energy efficiency / emissions reduction	New boiler plant emissions checked at least annually to ensure equipment operating efficiently and within emissions design parameters.
Other emissions reduction	New boiler plant uses low NO _x burner technology

3. General management techniques.

BAT criterion considered	Measures Implemented
EMS Implementation	Operator has established integrated quality, health, safety and environmental documented management systems in place including Policies, Standard Operating Procedures, Technical documents, risk assessments, accident and incident prevention and response protocols, performance monitoring and auditing protocols and review mechanisms. (Example documents are provided in this (C3.3a) supporting document folder.
Maintenance	Operator has established CMS planned preventative and breakdown maintenance schemes in place for all plant, equipment and infrastructure. Schemes include competence verification for all in house and Contractor staff engaged in maintenance work on site. All contractors must comply with the Corporate Rules for Contractors.
Training and competence	Operator has established training and competence verification processes in place for site staff including induction processes for new staff, and for contractor staff. All contractors must comply with the Corporate Rules for Contractors.
Performance monitoring, review and improvement	Operator has established systems in place to monitor key process variables (eg. raw materials, energy, water use, waste generation etc), review data and identify and implement plans to secure continuous performance improvement.
Complaints	Operator has established systems in place to respond by investigation, remedial action if necessary and communication with relevant parties to complaints (eg. noise, odour etc) from site neighbours and other stakeholders who may be affected by site activities.
Accidents and Incidents	Accident management plan in place designed to prevent, control and/or mitigate the consequences of environmental accidents and incidents including clean up and restoration where applicable.
Site Security	Site protected by security fencing (2.4m high welded steel mesh around operational site). Alarms on all building access points. CCTV monitoring of site by security staff. Controlled vehicular and pedestrian access to site. Security staff on site 24 hours / 7 days per week
Site Closure	EMS includes a formal documented site closure plan with linkages to its baseline site condition report and its operational site protection and monitoring plans.

Best available techniques are used to eliminate where possible or otherwise reduce to as low a level as possible emissions from the effluent treatment plant to air and water.

In relation to air, the only ETP related point source continuous emission point results from the extraction of air from ETP building. Air from the building is extracted in order to provide ventilation within the working area, which is enclosed to minimise the potential for fugitive odour releases and passed through activated carbon filters before release to atmosphere.

Further information relating to the emission point location and the composition of emissions to air from the ETP building is provided in supporting document folders C2.5a, Site Plans, and C3.2, Emissions to Air, Water and Land. Further information relating to the specification and performance of odour abatement equipment used in the ETP building is provided in supporting document folder B3.1, Activities to be Varied.

In relation to water, the only ETP related point source emission point is the outfall from the effluent treatment plant to the surface water course, Watton Brook.

Further information relating to the emission point location and composition of emissions to surface water is provided in supporting document folders C2.5a, Site Plans, and C3.2, Emissions to Air, Water and Land.

Further information relating to the control and monitoring of fugitive odour and noise emissions from the effluent treatment plant is provided in supporting document folder B3.3b, General Requirements.

Best available techniques are used to minimise the use of energy, water and other raw materials, to avoid the generation of waste where possible and, where waste is generated, to ensure that it is disposed of in accordance with the waste hierarchy. Further information relating to raw materials use including water, energy use and waste avoidance is provided in supporting document folders C3.6d, Use of Raw and Other Materials and Water, C3.6a and b, Energy Efficiency and Energy Use and C3.6e, Waste Avoidance.